

PATENT  
Docket No. 416272001410  
Cl. Ref. B99-002-3

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**CHASE J. TROMBELLA**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In the application of:

Myeong Je-CHO et al.

Serial No.: To Be Assigned

Filing Date: HEREWITH

For: BARLEY GENE FOR THIOREDOXIN  
AND NADP-THIOREDOXIN  
REDUCTASE

Examiner: To Be Assigned

Group Art Unit: To Be Assigned

**PRELIMINARY AMENDMENT**

BOX PATENT APPLICATION  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

In advance of prosecution, please enter the following amendments and remarks.

**IN THE SPECIFICATION**

At page 1, line 8, please delete the first paragraph and replace it with the following new first paragraph:

--This application is a Divisional Application of Serial No. 09/540,014 filed March 31, 2000, which claims the benefit of the filing date of Application Serial No. 60/127,198, filed

March 31, 1999; application Serial No. 60/169,162 filed December 6, 1999; application Serial No. 60/177,740 filed January 21, 2000; and application Serial No. 60/177,739 filed January 21, 2000, all of which are expressly incorporated by reference in their entirety.--

On page 4, line 23, after "proteins" insert --(SEQ ID NO:2, 4 and 6 respectively)--.

On page 4, line 27, after "sequences" insert --(SEQ ID NOs:1, 3 and 5 respectively)--.

On page 4, line 34, after "*thaliana*" insert --(SEQ ID NO:24)--.

On page 4, line 34, after "*coli*" insert --(SEQ ID NO:25)--.

On page 5, line 1, after "*gene*" insert --(SEQ ID NO:10)--.

On page 5, line 5, after "*thaliana*" insert --(SEQ ID NO:26)--.

On page 5, line 5, after "*coli*" insert --(SEQ ID NO:27)--.

On page 5, line 33, after "promoter" insert --(SEQ ID NO:11)--.

On page 5, line 36, after "promoter" insert --(SEQ ID NO:12)--.

On page 59, line 2, replace the term "SEQ ID NO:34A) with --SEQ ID NO:48--.

On page 59, line 3, replace the term "SEQ ID NO:35) with --SEQ ID NO:51--.

On page 69, line 35, replace the term "SEQ ID NO:7" with --SEQ ID NO:32--.

On page 69, line 36, replace the term "SEQ ID NO:8" with --SEQ ID NO:58--.

On page 75, line 21 after "11" insert --SEQ ID NO:11--.

On page 75, line 21 after "12" insert -- SEQ ID NO:12--.

### **IN THE CLAIMS**

Please CANCEL claims 1-28.

29. (Reiterated) A recombinant nucleic acid encoding an NTR protein comprising a nucleic acid that hybridizes under high stringency conditions to a sequence complementary to that set forth in Figure 5A (SEQ ID NO:10).
30. (Reiterated) The recombinant nucleic acid of claim 29 comprising a nucleic acid sequence as set forth in Figure 5A (SEQ ID NO:10).
31. (Reiterated) A recombinant nucleic acid encoding an NTR protein comprising a nucleic acid having at least 75% sequence identity to a sequence as set forth in Figure 5A (SEQ ID NO:10).
32. (Reiterated) A recombinant nucleic acid encoding an amino acid sequence as shown in Figure 4 (SEQ ID NO:9).
33. (Amended) A host cell comprising the recombinant nucleic acid of claim 29.
34. (Amended) An expression vector comprising the recombinant nucleic acid of claim 29 operably linked to a transcriptional regulatory sequence.
35. (Amended) A host cell comprising an expression vector comprising the recombinant nucleic acid of claim 29 operably linked to a transcriptional regulatory sequence active in said host cell.
36. (Amended) A transgenic plant comprising the recombinant nucleic acid of claim 29.

37. (Amended) A transgenic plant comprising a host cell comprising an expression vector comprising the recombinant nucleic acid of claim 29, operably linked to a transcriptional regulatory sequence active in said cell.
38. (Amended) A transgenic plant comprising a host cell comprising an expression vector comprising the recombinant nucleic acid of claim 29 operably linked to a transcriptional regulatory sequence active in said cell.
39. (Reiterated) The transgenic plant of claim 38 wherein said host cell is a seed cell.
40. (Amended) A transgenic seed comprising the recombinant nucleic acid of claim 29 operably linked to transcriptional regulatory sequences active in said seed.
41. (Reiterated) A method of expressing an NTR protein comprising culturing a host cell comprising the recombinant nucleic acid of claim 29 under conditions suitable for expression of said NTR protein.
42. (Reiterated) A method of expressing an NTR protein comprising culturing a host cell comprising an expression vector comprising the recombinant nucleic acid of claim 29 operably linked to regulatory sequences active in said host cell under conditions suitable for expression of said NTR protein.
43. (Reiterated) A method of expressing an NTR protein comprising culturing a transgenic plant comprising the recombinant nucleic acid of claim 29 under conditions suitable for expression of said NTR protein.

44. (Reiterated) A method of expressing an NTR protein comprising culturing a transgenic plant comprising an expression vector comprising the recombinant nucleic acid of claim 29 operably linked to regulatory sequences active in said transgenic plant under conditions suitable for expression of said NTR protein.
45. (Reiterated) A method of expressing an NTR protein comprising culturing the transgenic seed of claim 40.
46. (Amended) The method of claim 41 further comprising recovering said protein.
47. (Reiterated) A recombinant NTR polypeptide encoded by the recombinant nucleic acid of claim 29.
48. (Reiterated) A recombinant NTR polypeptide comprising an amino acid sequence having at least 80% sequence identity with the sequence set forth in Figure 4 (SEQ ID NO:9).
49. (Reiterated) The recombinant NTR polypeptide of claim 48 wherein said sequence is set forth in Figure 4 (SEQ ID NO:9).

Please CANCEL 50 to 64.

65. (Reiterated) A isolated nucleic acid encoding an NTR protein comprising a nucleic acid that hybridizes under high stringency conditions to a sequence complementary to that set forth in Figure 5A (SEQ ID NO:10).

66. (Reiterated) The isolated nucleic acid of claim 65 comprising a nucleic acid sequence as set forth in Figure 5A (SEQ ID NO:10).

67. (Reiterated) An isolated nucleic acid encoding an NTR protein comprising a nucleic acid having at least 75% sequence identity to a sequence as set forth in Figure 5A (SEQ ID NO:10).

68. (Reiterated) An isolated nucleic acid encoding an amino acid sequence as shown in Figure 4 (SEQ ID NO:9).

69. (Amended) A transgenic plant comprising the isolated nucleic acid of claim 65.

70. (Amended) A transgenic seed comprising the recombinant nucleic acid of claim 65, operably linked to transcriptional regulatory sequences active in said seed.

Please CANCEL claims 71 and 72.

Please ADD the following NEW claims.

73. (New) An expression vector comprising the recombinant nucleic of claim 30 operably linked to a transcriptional regulatory sequence.

74. (New) An expression vector comprising the recombinant nucleic of claim 31 operably linked to a transcriptional regulatory sequence.

75. (New) An expression vector comprising the recombinant nucleic of claim 32 operably linked to a transcriptional regulatory sequence.

76. (New) A host cell comprising an expression vector comprising the recombinant nucleic acid of claim 30 operably linked to a transcriptional regulatory sequence active in said host cell.

77. (New) A host cell comprising an expression vector comprising the recombinant nucleic acid of claim 31 operably linked to a transcriptional regulatory sequence active in said host cell.

78. (New) A host cell comprising an expression vector comprising the recombinant nucleic acid of claim 32 operably linked to a transcriptional regulatory sequence active in said host cell.

79. (New) A transgenic plant comprising the recombinant nucleic acid of claim 30.

80. (New) A transgenic plant comprising the recombinant nucleic acid of claim 31.

81. (New) A transgenic plant comprising the recombinant nucleic acid of claim 32.

82. (New) A transgenic plant comprising an expression vector comprising the recombinant nucleic acid of claim 30 operably linked to a transcriptional regulatory sequence active in said cell.

83. (New) A transgenic plant comprising an expression vector comprising the recombinant nucleic acid of claim 31 operably linked to a transcriptional regulatory sequence active in said cell.

84. (New) A transgenic plant comprising an expression vector comprising the recombinant nucleic acid of claim 32 operably linked to a transcriptional regulatory sequence active in said cell.

85. (New) A transgenic plant comprising a host cell comprising an expression vector comprising the recombinant nucleic acid of claim 30 operably linked to a transcriptional regulatory sequence active in said cell.

86. (New) A transgenic plant comprising a host cell comprising an expression vector comprising the recombinant nucleic acid of claim 31 operably linked to a transcriptional regulatory sequence active in said cell.

87. (New) A transgenic plant comprising a host cell comprising an expression vector comprising the recombinant nucleic acid of claim 32 operably linked to a transcriptional regulatory sequence active in said cell.

88. (New) A transgenic seed comprising the recombinant nucleic acid of claim 30 operably linked to transcriptional regulatory sequences active in said seed.



89. (New) A transgenic seed comprising the recombinant nucleic acid of claim 31 operably linked to transcriptional regulatory sequences active in said seed.

90. (New) A transgenic seed comprising the recombinant nucleic acid of claim 32 operably linked to transcriptional regulatory sequences active in said seed.

91. (New) The method of claim 42 further comprising recovering said protein.

92. (New) The method of claim 43 further comprising recovering said protein.

93. (New) The method of claim 44 further comprising recovering said protein.

94. (New) The method of claim 45 further comprising recovering said protein.

#### REMARKS

Reconsideration is respectfully requested. Claims 1-28, 50-64, and 71-72 have been canceled. Claims 33-38, 40, 46, 69 and 70, have been amended. New claims 73-94 have been added to replace the multiple dependent claims. The specification has been amended to recite the specific SEQ ID NO:'s. Concurrent with this preliminary amendment, Applicants request that the Examiner transfer the Sequence Listing from 09/540,014 to this application. The claim amendments are supported throughout the application as filed. No new matter has been added. Claims 29 - 49, 65 to 70 and 73 - 94, will be pending in this divisional application.

Early and favorable action is requested.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 416272001410. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,

Dated: March 05, 2002

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“Version with markings to show changes made”

**In the Specification**

This application is a Divisional Application of Serial No. 09/540,014 filed March 31, 2000, [This application] which claims the benefit of the filing date of Application Serial No. 60/127,198, filed March 31, 1999 [pending], application Serial No. 60/169,162 filed December 6, 1999 [pending], application Serial No. 60/177,740 filed January 21, 2000 [pending], and application Serial No. 60/177,739 filed January 21, 2000, [pending], all of which are expressly incorporated by reference in their entirety.

**In the Claims**

Please CANCEL claims 1-28.

33. (Amended) A host cell comprising the recombinant nucleic acid of claim 29 [, 30, 31, or 32].

34. (Amended) An expression vector comprising the recombinant nucleic acid of claim 29, [30, 31, or 32] operably linked to a transcriptional regulatory sequence.

35. (Amended) A host cell comprising an expression vector comprising the recombinant nucleic acid of claim 29, [30, 31, or 32] operably linked to a transcriptional regulatory sequence active in said host cell.

36. (Amended) A transgenic plant comprising the recombinant nucleic acid of claim 29 [, 30, 31, or 32].

37. (Amended) A transgenic plant comprising an expression vector comprising the recombinant nucleic acid of claim 29, [30, 31, or 32] operably linked to a transcriptional regulatory sequence active in said cell.

38. (Amended) A transgenic plant comprising a host cell comprising an expression vector comprising the recombinant nucleic acid of claim 29, [30, 31, or 32] operably linked to a transcriptional regulatory sequence active in said cell.

40. (Amended) A transgenic seed comprising the recombinant nucleic acid of claim 29, [30, 31, or 32] operably linked to transcriptional regulatory sequences active in said seed.

46. (Amended) The method of claim 41, [42, 43, 44, or 45] further comprising recovering said protein.

Please CANCEL claims 50 to 64.

69. (Amended) A transgenic plant comprising the isolated nucleic acid of claim 65 [, 66, 67, 68, or 69].

70. (Amended) A transgenic seed comprising the recombinant nucleic acid of claim 65, [66, 67, 68, or 69] operably linked to transcriptional regulatory sequences active in said seed.

Please cancel claims 71 and 72.

Please ADD the following NEW claims.

--73. (New) An expression vector comprising the recombinant nucleic of claim 30 operably linked to a transcriptional regulatory sequence.

74. (New) An expression vector comprising the recombinant nucleic of claim 31 operably linked to a transcriptional regulatory sequence.

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80. (New) A transgenic plant comprising the recombinant nucleic acid of claim 31.

81. (New) A transgenic plant comprising the recombinant nucleic acid of claim 32.

82. (New) A transgenic plant comprising a host cell comprising an expression vector comprising the recombinant nucleic acid of claim 30 operably linked to a transcriptional regulatory sequence active in said cell.

83. (New) A transgenic plant comprising a host cell comprising an expression vector comprising the recombinant nucleic acid of claim 31 operably linked to a transcriptional regulatory sequence active in said cell.

84. (New) A transgenic plant comprising a host cell comprising an expression vector comprising the recombinant nucleic acid of claim 32 operably linked to a transcriptional regulatory sequence active in said cell.

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86. (New) A transgenic plant comprising a host cell comprising an expression vector comprising the recombinant nucleic acid of claim 31 operably linked to a transcriptional regulatory sequence active in said cell.

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92. (New) The method of claim 43 further comprising recovering said protein.
93. (New) The method of claim 44 further comprising recovering said protein.
94. (New) The method of claim 45 further comprising recovering said protein.--